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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,102	12/02/2003	Ciprian Agapi	BOC9-2003-0074 (445)	4811
40987	7590	01/06/2009		
AKERMAN SENTERFITT P. O. BOX 3188 WEST PALM BEACH, FL 33402-3188			EXAMINER COLUCCI, MICHAEL C	
			ART UNIT 2626	PAPER NUMBER
			MAIL DATE 01/06/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/726,102	<b>Applicant(s)</b> AGAPI ET AL.	
	<b>Examiner</b> MICHAEL C. COLUCCI	<b>Art Unit</b> 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/08/2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 12/08/2008 have been fully considered but they are not persuasive.

#### **Argument (page 4 paragraph 3 & page 5 paragraph 3):**

- “If the new option "midnight" is not present in the pre-built grammar time.jsgf, it is used as an external referent for use in the graphical callflow and becomes part of a newly generated grammar. If the new option "midnight" is present in the pre-built grammar time.jsgf, the new option is only used as external referent for use in the graphical callflow and does not become part of a newly generated grammar”
- “the present invention does not concern the expansion of expressions recognized by the grammars, but rather the building of new grammars from individual options selected during the callflow design if the individual options are not already in the pre-built grammars”

#### **Response to argument(s):**

Examiner takes the position that the arguments presented contradict the teachings of the present invention, wherein the Ehsani in view of Washio in fact clearly appear to teach the cited limitations of the claim language and do not appear to teach or suggest teaching away from the present invention, whereby the references and the present invention are both within the scope of speech recognition, grammar building, and call flow design by a user. Ehsani teaches a

significant advantage of using a language modeling technique to iteratively refine corpus segmentation is that this technique allows us to identify new phrases and collocations and thereby enlarge our initial phrase dictionary. A language model based corpus segmentation assigns probabilities not only to phrases contained in the dictionary, but to unseen phrases as well (phrases not included in the dictionary). Recurring unseen phrases encountered in the parses with the highest unigram probability score are likely to be significant fixed phrases rather than just random word sequences. By keeping track of unseen phrases and selecting recurring phrases with the highest unigram probabilities, we identify new collocations that can be added to the dictionary. There are two ways of implementing this procedure. In the first case, we start a unigram language model, and use this model to segment sub-corpus C2. The segmented sub-corpus C2 is subsequently used to build a new, improved unigram language model on the initial sub-corpus C1. We iterate the procedure until we see little change in the unigram probability scores. At this point we switch to a bigram language model (based on phrase pairs) and reiterate the language modeling process until we see very little change. Then we use a tri-gram model (based on sequences of three phrases) and reiterate the procedure again until we see little changes in the segmentation statistics and few new, unseen phrases. At this point, our dictionary contains a large number of plausible phrase candidates and we have obtained a fairly good parse through each utterance ([0162-0163]).

Further, Ehsani teaches that a database comprises anywhere from 500,000 and 1 million phrase entries. The number of phrases may vary, depending on the size of the initial text corpus and the domain to be modeled. The minimum requirement is that the initial text corpus is large enough for statistical modeling. Generally, a larger, semantically richer corpus tends to yield a larger phrase database, which in turn is likely to provide a greater number of linguistic variants for each phrase. In addition to the phrase entries, the database comprises a vocabulary of lexical items containing objects, locations, proper names, dates, times, etc. that are used to fill the slots in phrase templates such as "how do I get to . . .?" Some partial phrases may occur in several different groupings. For example, the sub-phrase "I know" in "I know what you mean" may also occur in another class containing alternate ways of challenging a speaker ([0046-0047]).

Furthermore, Ehsani teaches a sub-set of the hand-checked phrase classes are tagged with abstract descriptors denoting abstract conceptual representations of the phrases contained in each class. Descriptors include speech act classifications for verb phrases (e.g. request [. . .], confirm [. . .], reject [. . .], clarify [. . .], etc. and object nouns (e.g. date, location, time, amount,) and proper names (businesses, restaurants, cities, etc.) ([0197]).

Additionally, Ehsani teaches the grammar designer provides editing functionality at all stages in the design process. Initial call flow designs can be saved, retrieved, and changed in both graphical and text mode. After the network has been expanded, the designer can go back to the initial call flow design and edit the phrase variants retrieved by the system. At this stage, most of the editing activity will consist of eliminating variants that don't fit the pragmatic context, and of completing phrase templates by accessing the supplemental databases provided by the system or by typing in the template fillers directly. The editor also permits review and modification of the meaning representations automatically supplied by the system ([0226]).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehsani et al. US 20020032564 A1 (hereinafter Ehsani) in view of Washio US 20030195739 A1 (hereinafter Washio).

Re claim 21, Ehsani teaches a method for creating speech recognition application callflow ([0221-0222]), comprising the steps of:

placing a prompt into a workspace ([0223]) of a graphical user interface for creating the speech recognition application callflow ([0221-0222]);

assigning an individual option and a pre-built grammar to the same prompt ([0226]);

if the individual option is a potential valid match to a recognition phrase or an annotation ([0047]) in the pre-built grammar,

However, Ehsani fails to teach treating the individual option as a valid output of the pre-built grammar; and

if the individual option fails to be a potential valid match to the recognition phrase or the annotation in the pre-built grammar, treating the individual option as an grammar independent from the pre-built grammar.

Washio teaches that upon receiving the instruction signal for updating the grammar data, the grammar adding and updating part 23 matches the grammar data obtained in the grammar obtaining part 26 with the new-recognition result in the speech newly-recognizing part 21, and determines an unmatched portion as an update portion of the grammar data. Then, the grammar adding and updating part 23 complements the grammar data with the update portion so as to update the grammar data, thereby outputting the updated grammar data to the updated grammar recording part 31 (Washio [0048] & Fig. 1).

Further, Washio teaches a similar process, wherein a grammar update system 2 of the present embodiment includes a speech newly-recognizing part 21 for obtaining speech data and the like in the IVR system 1, and recognizing the speech data without

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using the grammar data stored in the update original grammar recording part 15, a new-recognition result determining part 22 for determining whether or not the new-recognition result is acceptable using the grammar data stored in the update original grammar recording part 15, and a grammar adding and updating part 23 for specifying an update portion and adding it to the grammar data so as to update the data (Washio [0038]).

Furthermore, Washio teaches in other words that in the case where it is determined that the new-recognition result cannot be accepted based on the grammar data, the grammar adding and updating part 23 specifies such an unaccepted portion as an update portion, and adds the update portion to the, grammar data stored in the update original grammar recording part 15 so as to update the data (Washio [0041]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Ehsani to incorporate treating the individual option as a valid output of the pre-built grammar and if the individual option fails to be a potential valid match to the recognition phrase or the annotation in the pre-built grammar, treating the individual option as an grammar independent from the pre-built grammar as taught by Washio to allow for recognizing the speech data without using the grammar data stored in the update original grammar recording part, wherein the new-recognition result determining part determines whether or not the new-recognition result is acceptable using the grammar data stored in the update original grammar recording part, and the grammar adding and updating part for specifying an update



portion and adding it to the grammar data actually updates the output data (Washio [0048] & Fig. 1).

Re claim 22, Ehsani teaches the method of Claim 21, wherein the pre-built grammar ([0233], expanding grammars) is selected from a list of pre-built grammars ([0024], plurality of grammars).

Re claim 23, Ehsani fails to teach the method of Claim 22, wherein the individual option is compared with each grammar in the list of pre-built grammars and if there is a match, the individual option points to the matching grammar and if there is no match, the individual option becomes a new grammar.

Washio teaches that upon receiving the instruction signal for updating the grammar data, the grammar adding and updating part 23 matches the grammar data obtained in the grammar obtaining part 26 with the new-recognition result in the speech newly-recognizing part 21, and determines an unmatched portion as an update portion of the grammar data. Then, the grammar adding and updating part 23 complements the grammar data with the update portion so as to update the grammar data, thereby outputting the updated grammar data to the updated grammar recording part 31 (Washio [0048] & Fig. 1).

Further, Washio teaches a similar process, wherein a grammar update system 2 of the present embodiment includes a speech newly-recognizing part 21 for obtaining speech data and the like in the IVR system 1, and recognizing the speech data without

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using the grammar data stored in the update original grammar recording part 15, a new-recognition result determining part 22 for determining whether or not the new-recognition result is acceptable using the grammar data stored in the update original grammar recording part 15, and a grammar adding and updating part 23 for specifying an update portion and adding it to the grammar data so as to update the data (Washio [0038]).

Furthermore, Washio teaches in other words that in the case where it is determined that the new-recognition result cannot be accepted based on the grammar data, the grammar adding and updating part 23 specifies such an unaccepted portion as an update portion, and adds the update portion to the, grammar data stored in the update original grammar recording part 15 so as to update the data (Washio [0041]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Ehsani to incorporate the individual option is compared with each grammar in the list of pre-built grammars and if there is a match, the individual option points to the matching grammar and if there is no match, the individual option becomes a new grammar as taught by Washio to allow for recognizing the speech data without using the grammar data stored in the update original grammar recording part, wherein the new-recognition result determining part determines whether or not the new-recognition result is acceptable using the grammar data stored in the update original grammar recording part, and the grammar adding and updating part for specifying an update portion and adding it to the grammar data actually updates the output data (Washio [0048] & Fig. 1).

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571)-270-1847. The examiner can normally be reached on 9:30 am - 6:00 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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